AMENDMENTS TO THE CLAIMS

1. (Currently amended): A process for the ~~replication~~ amplification of a nucleic acid template comprising:

providing a primer covalently bound to a non-nucleotide carrier macromolecule;

hybridizing the bound primer to said template; and

extending said primer to form an extended primer which replicates from said template,

wherein said carrier macromolecule is water soluble at a temperature in the range of 0-60°C and is selected from the group consisting of: a homopolyamino acid, a synthetic polymer having nucleophilic functional groups, amylose, pectin, a natural gum, a polypeptide, bovine serum albumin, a polysaccharide, and a dextran or dextran derivative;

performing amplification of the nucleic acid template.

2. (Canceled)

3. (Currently amended) A process for the ~~replication~~ amplification of a nucleic acid template comprising:

providing a primer bound to a non-nucleotide carrier macromolecule via one or more moieties derived from divinyl sulfone;

hybridizing the bound primer to said template; and

extending said primer to form an extended primer which replicates from said template;

wherein the non-nucleotide carrier macromolecule is selected from the group consisting of: a homopolyamino acid, a synthetic polymer having nucleophilic functional groups, amylose, pectin, a natural gum, a polypeptide, bovine serum albumin, and a dextran or dextran derivative; and

performing amplification of the nucleic acid template.

4. (Previously presented): A process as claimed in claim 3, wherein the carrier macromolecule in its free state is substantially linear and substantially uncharged at a pH in the range of 4 to 10.

5. (Currently amended): A process as claimed in claim 4, wherein said non-nucleotide carrier ~~molecule~~ macromolecule has a peak molecular weight in the range of ~~80,000 to 4,000,000~~ of 1,000 to about 40,000,000 Daltons or 80,000 to about 500,000 Daltons.

6. (Previously presented): A process as claimed in claim 3, wherein said carrier macromolecule is water soluble and has a molecular weight in excess of 80,000 Daltons.

7. (Previously presented): A process as claimed in claim 3, wherein said primer is bound to said carrier macromolecule by a covalent linkage formed between one of the two vinyl groups of the divinyl sulphone and a reactive functionality on the carrier macromolecule, and

by a covalent linkage formed between one of the two vinyl groups of the divinyl sulphone and a reactive functionality on the primer.

8. (Previously presented): A process as claimed in claim 3, wherein said primer is extended by a polymerase wherein said polymerase incorporates nucleotides into said primer.

9. (Previously presented): A process as clamed in claim 3, wherein said primer is extended in a polymerase chain reaction (pcr), strand displacement amplification (sda), self-sustained sequence replication (ssr) or nucleic acid sequence-based amplification (nasba) amplification procedure.

10. (Previously presented): A process as claimed in claim 6, wherein said primer is extended by the action of a ligase sequentially ligating said primer to at least two other primers hybridised to said template.

11. (Previously presented): A process as claimed in claim 3, wherein said template is a double stranded template and is denatured to a single stranded form, said carrier macromolecule-bound primer is complementary in sequence to a region of one of the template strands and a second primer is provided which is complementary in sequence to a region of the other strand, which

second primer is also extended so as to form a complementary sequence copy of said template second strand.

12. (Previously presented): A process as claimed in claim 3, wherein said carrier macromolecule is bound to a solid support.

13. (Previously presented): A process as claimed in claim 8, further comprising using a second primer wherein said second primer is extended in said amplification procedure which is also bound to a carrier macromolecule.

14. (Previously presented): A process as claimed in claim 10, wherein said another primer which is ligated by said ligase is also bound to a carrier macromolecule.

15. (Previously presented): A process as claimed in claim 14, wherein during the extension, a detectable marker is incorporated into one of the extended primers.

16. (Previously presented): A process as claimed in claim 15, wherein said extension of one of the primers is conducted *in situ* in a biological sample.

17. (Previously presented): A process as claimed in claim 16, wherein said biological sample is a plant or animal tissue sample, microorganism culture, or microorganism culture medium.

18. (Currently amended): A method of detecting the presence of a nucleic acid bound to a non-nucleotide carrier macromolecule comprising:

providing a first nucleic acid bound to a non-nucleotide carrier macromolecule having a molecular weight in excess of ~~80,000~~ 100,000 Daltons;

providing a second nucleic acid bound to a non-nucleotide carrier macromolecule having a molecular weight in excess of ~~80,000~~ 100,000 Daltons;

contacting said first and second nucleic acids under hybridization conditions; and

detecting hybridization between said first and second nucleic acids.

19. (Currently amended): A method of detecting the presence of a nucleic acid template sequence comprising replicating the template by a method as claimed in claim [[3]] 17 to produce replicated template bound to said carrier macromolecule and detecting the presence of said replicated template bound to the carrier macromolecule by a method as claimed in claim 18.

20. (Previously presented): A method of detecting a nucleic acid sequence in a sample, comprising contacting said sample with a probe under hybridization conditions, wherein said probe comprises an extended primer having a sequence complementary to said sequence to be detected and wherein said probe has been made according to the method of claim 17 and further wherein said sequence was said template in the method of claim 17.

21. (Currently amended): An immobilized nucleic acid comprising a nucleic acid linked via one or more moieties derived from divinyl sulfone to a non-nucleotide carrier macromolecule selected from the group consisting of: a homopolyamino acid, amylose, pectin, a natural gum, a polypeptide, bovine serum albumin, polyvinyl alcohol, a polyallyl alcohol, a substituted polyacrylate, and a dextran or dextran derivative, which non-nucleotide carrier macromolecule is directly bound to a solid support selected from the group consisting of plates, strips, microtiter plates, wells, tubes, and membranes.

22. (Previously presented): A method of using the immobilized nucleic acid as claimed in claim 21 comprising,

formulating the immobilized nucleic acid as a primer or as a hybridization probe and introducing the immobilized nucleic acid into a hybridization or amplification reaction utilizing the primer or the hybridization probe.

23. (Previously presented): A process for the replication of a nucleic acid template comprising:

providing a primer being bonded to a carrier macromolecule selected from the group consisting of: a homopolyamino acid, a synthetic polymer having nucleophilic functional groups, amylose, pectin, a natural gum, a polypeptide, bovine serum albumin, and a dextran or dextran derivative;

hybridizing the bound primer to said template; and

extending said primer to form an extended primer which replicates from said template,

wherein said primer is bound to said carrier macromolecule via one or more moieties derived from divinyl sulphone,

at least one of the moieties is attached to the carrier macromolecule by a covalent linkage formed between one of the two vinyl groups of a divinyl sulphone molecule of the at least one moiety and a reactive functionality on the carrier macromolecule, and

at least one of the moieties is attached to the primer by a covalent linkage formed between one of the two vinyl groups of a divinyl sulphone molecule of the at least one moiety and a reactive functionality on the primer.

24. (Previously presented): The process of claim 3, wherein the carrier macromolecule is dextran or a dextran derivative.

25. (Previously presented): The process of claim 24, wherein said dextran in its free state is substantially linear and substantially unchanged at a pH in the range of 4 to 10.

26. (Previously presented): The process of claim 24, wherein said dextran has a peak molecular weight in the range of 1,000 to 40,000,000.

27. (Cancelled)

28. (Previously presented): The process of claim 24, wherein said primer is extended in a polymerase chain reaction (pcr) , strand displacement amplification (sda), self-sustained sequence replication (3sr) or nucleic acid sequence-based amplification (nasba) amplification procedure.

29. (Previously presented): The process of claim 24, wherein said primer is extended by the action of a ligase ligating said primer to at least one further primer hybridized to said template.

30. (Previously presented): The process of claim 24, wherein said template is a double stranded template and is denatured to single stranded form, said dextran-bound primer is complementary in sequence to a region of a first one of the template strands and a second primer is provided which is complementary in sequence to a region of the other strand, which second primer is also extended so as to form a complementary sequence copy of said template second strand.

31. (Previously presented): The process of claim 24, wherein said dextran is bound to a solid support.

32. (Previously presented): The process of claim 24, wherein said extension of the primer is conducted in situ in a biological sample.

33. (Previously presented): The process of claim 32, wherein said biological sample is a plant or animal tissue sample, microorganism culture, or microorganism culture medium.

34. (Previously presented): The process of claim 3, wherein said carrier macromolecule is a homopolyamino acid.